

WHAT IS CLAIMED IS:

1. A method of processing a request for a data communications session in a data network, comprising:

determining whether there is sufficient bandwidth to
5 accommodate the session in an initial cell associated with the request;

determining a set of cells contiguous or near to the initial cell to which the session may be transferred during the pendency of the session;

10 determining whether the selected set of cells have sufficient bandwidth to support a decision to admit the session; and

admitting the session to the initial cell if there is sufficient bandwidth in the initial cell and the
15 identified contiguous cells.

2. The method of Claim 1 wherein the step of determining whether or not there is sufficient bandwidth in the initial cell comprises the step of adding a
20 fraction of the current bandwidth usage of the cell with a fraction of the historic bandwidth usage of the cell.

3. The method of Claim 1 wherein the step of identifying contiguous cells comprises a step of
25 identifying contiguous cells to which the session may travel by identifying cells previously occupied by the user.

4. The method of Claim 3 wherein the step of
30 identifying cells previously occupied by the user comprises the step of identifying the percentage of time in which the user resides in a particular cell.

5 5. The method of Claim 1 wherein the step of
determining a set of cells comprises the step of
calculating a percentage likelihood that a user
requesting the session will affect each of a
predetermined number of cells and comparing such
percentages to a random number and selecting the set of
cells responsive to the comparison.

10 6. The method of Claim 1 wherein the step of
determining whether the selected set of cells have
sufficient bandwidth comprises the step of calculating a
probability that a user requesting the session will
enter a given cell and multiplying the probability by the
15 requested bandwidth to yield a probabilistic weighted
bandwidth and comparing the probabilistic weighted
bandwidth to the actual available bandwidth in the given
cell.

20 7. The method of Claim 1 and further comprising:
storing in a data base for a plurality of potential
users of the network a data set representing the historic
usage pattern of each of the plurality of users with
respect to the percentage of calls which affect a
25 plurality of numbers of cells.

8. The method of Claim 1 and further comprising:
determining if the user requesting the service has
ever resided in the initial cell or the contiguous or
near cells; and

5 if the user has not resided in the initial cell or
the contiguous cells, assigning a new user probability
profile to the user prior to calculating the available
bandwidth.

10 9. The method of Claim 1 wherein the step of
determining whether the selected set of cells have
sufficient bandwidth comprises the step of determining
the available bandwidth at a contiguous or near cell by
combining a fraction of the actual bandwidth available
15 for that cell with a fraction of the historic bandwidth
usage at that cell at a predetermined period of time in
the future.

20 10. The method of Claim 1 wherein the step of
determining a set of cells comprises the step of
generating a random probability fraction and adding the
transit cell probabilities associated with a particular
user until the random probability is exceeded and
including all the cells identified within the identified
25 number of transits from the initial cell within the set
of cells identified.

11. A data communications system comprising:

a plurality of base transceiver stations each station associated with a cell;

a resource manager in communication with each of the
5 base transceiver stations and operable to perform an admission control decision upon request from the base transceiver stations, the admission control decision comprising the steps of:

determining whether there is sufficient bandwidth to
10 accommodate the session in the initial cell associated with the request;

determining a set of contiguous set of cells contiguous to the initial cell to which the session may be transferred during the pendency of the session;

15 determining whether the contiguous cells have sufficient bandwidth to service the session; and

admitting the session to the initial cell if there is sufficient bandwidth in the initial cell and the identified contiguous cells.

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12. The system of Claim 11 wherein the resource manager is operable to store and use a table of data comprising historic usage information for a plurality of users of the system.

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13. The system of Claim 12 wherein the historic usage information comprises information associated with the cells in the system most frequently occupied by the user.

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14. The system of Claim 12 wherein the historic usage information associated with the number of cells affected by calls made by each of the plurality of users.

5 15. The system of Claim 11 wherein the resource manager is operable to store and use a table of data comprising historic bandwidth usages information for a plurality of cells in the system.

10 16. The system of Claim 15 wherein the usage information comprises usage information associated with usage levels at different times of day.

15 17. The system of Claim 15 wherein the usage information comprises usage information associated with usage levels at different day of the week.